Drum, Loyka & Associates, LLC
CIVIL ENGINEERS - LAND SURVEYORS

August 27, 2015

City of Annapolis
Department of Neighborhoods & Environmental Programs
145 Gorman Street, 3rd Floor

Re: Griscom Square
Tyler Avenue @ Bay Ridge Avenue
FSD2014-002
FCP2015-002

Dear Sir/Madam,

On behalf of our client, Pilli Development Company, INC.; Drum, Loyka & Associates, LLC has assembled the attached Concept Forest Conservation and Stormwater Management revision package for FCP2015-002, also known as "Griscom Square." The project is in the Forest Conservation Act Review Process, and the Forest Stand Delineation plans were approved via a letter issued on February 4th, 2015. A copy of that letter is included in this submittal. A variance request was included as part of that approval, a copy of the variance request letter is also included in this submittal.

Concept plans were previously submitted in March of 2015, and comments were generated by DNEP in a letter dated April 24th, 2015. The plans and reports have been revised to address those comments. The primary revisions to the plans include an update to the tree canopy, and a comprehensive re-design of the proposed Stormwater Management Conceptual layout. Griscom Square was originally approved for subdivision prior to the enactment of the Environmental Site Design requirements of the 2000 Maryland Stormwater Design Manual, and the previously submitted concept design relied on Best Management Practices that were acceptable when the subdivision was approved. In response to DNEP's requirement that the development be compliant with current Stormwater Management Act amendments, the site was re-evaluated to utilize ESD practices to manage target rainfall depths. A detailed examination of the proposed SWM design is provided in the attached report.

The proposed Storm Drain concept is relatively unchanged from the previous submittal. The revisions to the Stormwater Management design resulted in the removal of one of the proposed inlets. The Flow Tabulations and Hydraulic Grade Line calculations have been revised accordingly.

The delineation of the limit of disturbance and the Forest Conservation Easement have been revised so that they do not overlap. The revisions to both are minor, resulting in a reduction in total proposed disturbed area. The Conservation Easement contains the required 0.31 acres of existing forest. The Sediment and Erosion controls were revised to be consistent with the new LoD. The tree preservation tabulations have been revised to include which trees are to remain and which tree are to be removed.

A point-by-point response to DNEP comments is provided on the following pages:

Forest Conservation Act Compliance:

1) General Note #2 has been updated with the additional information as requested.
2) The tree preservation tabulations have been revised to include the condition of the existing trees on site, as well as which trees are proposed to be removed.
3) The Limit of Disturbance is shown on Sheet 3 of the plans. The Forest Conservation Easement is outside the LoD.
4) Per correspondence with Mr. Frank Biba, Chief of Environmental Programs for DNEP, all individual trees are not required to be shown on the plans. The plans have been revised with a more detailed canopy line where individual trees were not located.
5) Tree preservation will be in accordance with City Code. Tree protection details will be provided at the Grading Permit phase of the review process.
6) Mitigation for the removal of trees 24" or greater will be provided during the Grading Permit phase of the review process. The design proposes to remove twelve trees that are 24" or greater, and to mitigate at a 3:1 ratio per City Code, for a total of thirty-six trees. We would like to incorporate some of this mitigation into the Stormwater Management plantings, which hasn't received concept approval at this time. Planting will also be provided within the proposed Forest Conservation Easement where practical.
7) The Limit of Disturbance is shown on Sheet 4 of the plans.
8) Sheet 4 is the Site Development Plan. The existing trees, canopy, and the indication of whether the trees are to be removed have been addressed on Sheet 3 of the plans, the Tree Preservation Plan; see above comment responses
9) The referenced Sweet Gum has been changed to a species which is non-fruit-bearing cultivar.+
10) The referenced trees have been moved to the rear of lots 1 and 2.
11) The referenced trees have been moved to lot 6 and Open Space 'B'.
12) The root pruning detail has been revised.
13) The Forest Conservation Measures notation has been updated to say "Environmentalist" instead of "Forester."

Stormwater Management Act Compliance:

1) The site is comprised of 'C' soils, according to the NRCS Soil Maps. Soil borings performed on-site and detailed in the included Geotechnical Reports are generally consistent with the NRCS mapping. Some of those borings did indicate pockets of sandier soil scattered across the site. Infiltration practices are utilized where soil profiles are acceptable for their use. Vegetative Filters, designed with underdrains to allow for conveyance of overflow to the proposed Storm Drain system, are utilized where the soil profile indicates poor infiltration.
2) This response addresses multiple comments; calculation errors and inconsistencies have been corrected throughout the report.
3) Chapter 3 Best Management Practices have been eliminated from the stormwater management design. Stormwater Management requirements have been calculated and addressed using the Environmental Site Design methodology from Chapter 5 of the 2000 Maryland Stormwater Design Manual, Volumes 1 & 2.
4) The Disconnection of Runoff factors are weighted. The creditable PE for each individual impervious surface is determined based on the achievable disconnection length for that surface. Those PEs are multiplied by the area of the contributing surface, and the sum of those numbers is divided by the sum of the areas of all the surfaces to determine a weighted PE to calculate the volume of storage provided by the practice. This office has found this methodology to be

generally accurate and consistent with calculating the amount of storage provided by each individual surface, and is typically more conservative. As noted in your comment, the ESDv calculated for disconnection from each individual surfaces resulted in 238.5 cubic feet, whereas the ESDv calculated after determining the weighted PE of each surface was 237 cubic feet. We feel this methodology is acceptable and prudent design.

5) Permeable pavements have been eliminated from the design based on the results of the soil borings conducted on the property.
6) A drainage area map has been added as Sheet 5 of the plans.
7) There is an existing retaining wall within the right-of-way for both Bay Ridge Avenue and Tyler Avenue, and the change in existing grades between the lots and the roadway requires one. The existing retaining wall within the right-of-way for Tyler Avenue is to remain. The proposed retaining wall within the right-of-way for Bay Ridge Avenue is farther from the roadway than the existing wall, and allows for the installation of a public sidewalk. Public Works approval for the location of the wall will be sought during the Grading Permit review phase.

If you have any questions regarding this submittal, please contact us at your earliest convenience.

Sincerely,
Drum, Loyka & Associates, LLC

Daniel Evans
Engineering Technician